

# Novelties in the Neotropical Genus *Ouratea* Aublet (Ochnaceae)

Claude Sastre

Laboratoire de Phanérogamie, Muséum National d'Histoire Naturelle, 16 rue Buffon, F-75005, Paris, France

**ABSTRACT.** A new section of *Ouratea*, section *Caducuae* Sastre, and eight new species of *Ouratea* from Venezuela and adjacent countries are described: *O. pendulosepala* Sastre (sect. *Cardiocarpae*), *O. oligantha* Steyermark ex Sastre (sect. *Cardiocarpae*), *O. apurensis* Sastre (sect. *Ouratea*), *O. paratatei* Sastre (sect. *Ouratea*), *O. cidiana* Sastre (sect. *Ouratella*), *O. guriensis* Sastre (sect. *Ouratella*), *O. pseudoguildingii* Sastre (sect. *Ouratella*), and *O. squamata* Sastre (sect. *Ouratella*).

During preparation of the Ochnaceae treatment for the *Flora of the Venezuelan Guayana*, approximately 20 undescribed species of *Ouratea* Aublet from southern Venezuela and adjacent areas have been found. In order to properly place these new species within the subgeneric classification, a brief review and update of the previous system (Sastre, 1988) is needed. In the previous classification, I recognized six sections: *Kaieteurea* (Dwyer) Sastre, *Cardiocarpae* (Engler) Sastre, *Polyouratea* (Tieghem) Sastre, *Persistens* Sastre, *Ouratella* (Tieghem) Sastre, and *Ouratea*, which is the type section of the genus (with *O. guianensis* Aublet as the type). The new system also has six sections, but section *Persistens* is now placed in synonymy of section *Ouratea*, and section *Caducuae* is newly described below.

Aublet's (1775) description of *Ouratea guianensis* was based on a flowering sheet (in BM), illustrated by plate no. 152, and all additional material of this species studied for my 1988 classification was either in flower or old fruit, making it impossible to assess the structure of the carpids (fruiting carpels) with precision. Recent study of herbarium specimens of *O. guianensis* from CAY, MO, NY, and VEN clearly shows, however, that its carpids are similar to those of the species previously included in section *Persistens*. This necessitates the transfer of section *Persistens* into the type section, and the recognition of a new section to include species previously (and erroneously) thought to be closely related to *O. guianensis*, but whose fruit structure is now seen to be different.

**Ouratea** sect. **Caducuae** Sastre, sect. nov. TYPE: *Ouratea longifolia* (Lamarck) Engler in Mart., Fl. Bras. 12(2): 316. 1876. *Ochna longifolia* Lamarck, Encycl. Méth. 4: 511. 1798.

Inflorescentia terminalis, flores 5 sepalis, 5 carpellis, fructus 5 sepalis caducis, 1-3 carpellis verticalibus.

Inflorescence terminal, flowers with 5 sepals and 5 carpels, sepals caducous in fruit, fruiting carpels 1-3, vertical.

## KEY TO THE SECTIONS OF *OURATEA*

1. Flowers with 2-4 sepals united in 2-3 parts . . . . . 1. sect. *Kaieteurea*
1. Flowers with 5 distinct sepals . . . . . 2
- 2(1). Fruits with the carpels borne horizontally . . . . . 2. sect. *Cardiocarpae*
2. Fruits with the carpels borne vertically . . . . . 3
- 3(2). Flowers with (5)6-10 carpels . . . . . 3. sect. *Polyouratea*
3. Flowers always with 5 carpels . . . . . 4
- 4(3). Fruits with persistent sepals . . . . . 4. sect. *Ouratea*
4. Fruits without sepals . . . . . 5
- 5(4). Inflorescences axillary, rarely terminal . . . . . 5. sect. *Ouratella*
5. Inflorescences always terminal . . . . . 6. sect. *Caducuae*

## DESCRIPTION AND NOMENCLATURE OF THE SECTIONS

1. *Ouratea* Aublet sect. *Kaieteurea* (Dwyer) Sastre, Bull. Mus. Natl. Hist. Nat. 4<sup>o</sup>. sér. 10, sect. B Adansonia 1: 50. 1988. *Kaieteurea* Dwyer, Bull. Torrey Bot. Club 70: 50. 1943. TYPE: *Ouratea gillyana* (Dwyer) Sandwith & Maguire.

Inflorescence terminal or axillary; flowers with 2-4 sepals united in 2-3 parts, and 5 (-7 in *O. articulata* Sastre) carpels; fruits with sepals caducous or persistent and the carpels vertical.

2. *Ouratea* Aublet sect. *Cardiocarpae* (Engler) Sastre, Bull. Mus. Natl. Hist. Nat. 4<sup>o</sup>. sér. 10, sect. B Adansonia 1: 55. 1988. *Ouratea* sect. *Eugomphia* (Planchon) Engler, ser. *Cardiocarpae* Engler in Mart., Fl. Bras. 12(2): 307. 1876. TYPE: *Ouratea cardiosperma* (DC.) Engler.

*Diouratea* Tieghem, Ann. Sci. Nat. Bot. sér. 8, 16: 227. 1902.

Inflorescence terminal; flowers with 5 sepals and 5 carpels; fruit with the carpels horizontal.

3. *Ouratea* Aublet sect. *Polyouratea* (Tieghem) Sastre, Bull. Mus. Natl. Hist. Nat. 4°. sér. 10, sect. B Adansonia 1: 55. 1988. *Polyouratea* Tieghem, Ann. Sci. Nat. Bot. sér. 8, 16: 268. 1902. TYPE: *Ouratea hexasperma* (A. St. Hilaire) Baillon.

Inflorescence terminal; flowers with 5 sepals and 6–10 carpels; fruit with the carpels vertical.

4. *Ouratea* Aublet sect. *Ouratea*. TYPE: *Ouratea guianensis* Aublet.

*Ouratea* sect. *Persistens* Sastre, Bull. Mus. Natl. Hist. Nat. 4°. sér. 10, sect. B Adansonia 1: 59. 1988.

Inflorescence terminal; flowers with 5 sepals and 5 carpels; fruits with sepals persistent and the carpels vertical.

5. *Ouratea* Aublet sect. *Ouratella* (Tieghem) Sastre, Bull. Mus. Natl. Hist. Nat. 4°. sér. 10, sect. B Adansonia 1: 59. 1988. *Ouratella* Tieghem, Ann. Sci. Nat. Bot. sér. 8, 16: 289. 1902. TYPE: *Ouratea mexicana* (Humboldt & Bonpland) Engler.

Inflorescence axillary, rarely terminal, spicate or paniculate; flowers with 5 sepals and 5 carpels, fruit with carpels vertical.

6. *Ouratea* Aublet sect. *Caducuae* Sastre. TYPE: *Ouratea longifolia* (Lamarck) Engler.

*Ouratea* Aublet sect. *Ouratea*, pro parte fide Sastre (1988) excluding *O. guianensis*.

See description above.

Inflorescence terminal; flowers with 5 sepals and 5 carpels; fruit with carpels vertical.

Following are descriptions of eight new species in sections *Cardiocarpae* (two species), *Ouratea* (two species), and *Ouratella* (four species). The description of new species in section *Caducuae* will be presented in a future paper.

#### OURATEA SECTION *CARDIOCARPAE*

- Ouratea pendulosepala*** Sastre, sp. nov. TYPE: Brazil. Amazonas: Mun. Pres. Figueredo, 8 km da Vila Residencial Atrari, Canteiro de obras de Balbina. 1°30'–2°S, 59°30'–60°W, mata de terra firme, solo argiloso, 19 sep. 1986 (fr), C. A. Cid Ferreira et al. 8219 (holotype, P; isotypes, INPA not seen, NY not seen). Figure 1.

Ab *Ouratea cerebroidea* Sastre, foliis nervis non impressis, paucis visibilibus, margine sub-integra, sepalis 12 × 2 mm, persistentibus pendusque in fructu, staminibus papillatis, stylo 10 mm longo, differt.

Tree 12 m tall, branches glabrous. Leaves coriaceous, 12–16 cm long, 5–6 cm wide, obovate, apex acuminate, base attenuate, margin undulate, subentire, principal vein salient on lower surface, lateral veins faintly evident. Inflorescence paniculate, terminal, 14 cm long. Peduncle 13–15 mm long, weakly papillate; sepals 5, 10–11 × 2 mm, ovate; petals 5, obovate, 15–16 × 6–7 mm; stamens 10, papillate, 10 mm long. Young fruits with peduncle 15 mm long, sepals 5, pendent and persistent in older fruits, 12 × 2 mm, ovate. Fruits with 1–4 horizontal carpels, the carpophore sub-cylindric.

Until now, section *Cardiocarpae* was restricted to the Guianas and had only two species: *Ouratea cardiosperma* (DC.) Engler and *O. cerebroidea* Sastre. The pendent, persistent sepals are characteristic of the new species and are unknown in the other species of *Ouratea*.

*Paratypes*. BRAZIL. **Amapá**: Campi, EMBRAPA reserve and vicinity, 00°10'N, 51°37'W, 6 Sep. 1983, S. Mori et al. 15864, 15865, 15868, 15869, 15874 (MG not seen, NY not seen, P). **Amazonas**: Mun. Barcelos, 00°30'N, 63°30'W, rio Aracá, 3 jul. 1985, E. Sette Silva et al. 214 (INPA not seen, NY not seen, P). **Pará**: Mun. de Almeirin, Mte. Dourado, estrada MTD-oeste em direção a serra da mina de bauxita, 17 sep. 1985 (fl), M. J. P. Pires et al. 627 (K not seen, P).

- Ouratea oligantha*** Steyermark ex Sastre, sp. nov. TYPE: Venezuela. Bolívar: Alto Río Cuyuní, SE escarpment of Cerro Pitín, Cordillera Epicara, 400 m, B. Maguire, J. A. Steyermark & C. Maguire 53644 (holotype, NY). Figure 2.

Ab *Ouratea pendulosepala* Sastre, inflorescentiis parvis (4–10 cm longis), laminis parvis (7–9 cm longis) et sepalis caducis in fructu, differt.

Shrub 1.5–4 m tall, branches glabrous. Petiole 1 cm long, leaves coriaceous, 7–9 × 3–3.5 cm,



elliptic, apex acuminate, base obtuse, margins toothed, undulate, principal vein salient on lower surface, with 8–12 unpaired lateral veins on each side of the principal vein, ascending, salient on lower surface between the small, subparallel veins, a few of which are also salient. Inflorescences usually axillary, sometimes terminal, spicate or sometimes paniculate, 4–10 cm long. Pedicel 12 mm long, sepals 5, 7 × 2 mm, oblong; petals 5, 15 × 6 mm, ovate; stamens 10, 1 cm long, carpels 5, horizontal; style single, 5.5 mm long. Young fruit with peduncle 15 mm long, sepals late-caducous, carpels 1–3, hemispheric, carpophore conical.

*Distribution.* Known only from the type locality.

The type and paratypes cited here were annotated by Steyermark at different times as "*O. oligantha* sp. nov." and "*O. soderstromii* Sastre." I have chosen to use Steyermark's name for the new species. The material cited clearly does not belong to *Ouratea soderstromii*; the new species belongs to section *Cardiocarpae*, while *O. soderstromii* is a member of section *Ouratella*. The name used by Steyermark is validated here. *Ouratea oligantha* is most closely related to *O. pendulosepala*, described above, but differs by the short inflorescences (4–10 cm), that are usually spicate (vs. largely paniculate), short leaves (7–9 cm long), and the sepals caducous in fruit. *Ouratea pendulosepala* has longer inflorescences (14 cm long), longer leaves (12–16 cm long), and persistent sepals. *Ouratea oligantha* is the first species of section *Cardiocarpae* known in Venezuela.

*Paratypes.* VENEZUELA. **Bolívar:** Alto Río Cuyuní, Río Chicanan, Cerro Pitín, Cordillera Epicara, 3 sep. 1962, Maguire et al. 53568 (NY), 9–11 sep. 1962, Maguire et al. 53679 (NY).

#### OURATEA SECTION OURATEA

***Ouratea apurensis*** Sastre, sp. nov. TYPE: Venezuela. Apure: Reserva Forestal San Camilo, selva siempreverde a lo largo de la Quebrada de la Cristalina hasta la vega del Cerro la Nulita, 250–280 m, 2 apr. 1968, Steyermark et al. 101762 (holotype, P; isotypes, NY, VEN). Figure 3.

Ab *Ouratea marahuacensi* Maguire et Steyermark, folia petiolo 2–3 mm longo (non 5–9 mm) nervis lateralibus prominentibus, sepalis 8 × 2–3 mm, petalis 10 × 5 mm, staminibus 7.5 mm longis, stylo 7.5 mm longo, differt.

Tree 7 m tall, branches glabrous. Petioles 2–3 mm long, leaf blades elliptic, undulate, 6.5–9 × 2–2.5 cm, apex acuminate, base attenuate, margin

crenulate, principal vein salient on the lower surface, lateral vein prominent, transversal tertiary veins parallel. Inflorescence paniculate, terminal, 8–11 cm long. Peduncle 5–6 mm long, with short hairs 0.2–0.3 mm long; sepals 5, oblong-lanceolate, 8 × 2–3 mm; petals 5, obovate, 10 × 5 mm; stamens 10, 7.5 mm long; style 7.5 mm long. Young fruits with sepals persistent.

Both *Ouratea marahuacensis* Maguire & Steyermark and *O. apurensis* occur in Venezuela, the former on Cerro Marahuaca, Estado Amazonas, at 1150 m elevation, the latter in the Reserva Forestal San Camilo, Estado Apure. *Ouratea apurensis* differs from *O. marahuacensis* by the shorter petiole (2–3 mm long vs. 5–9 mm long), salient lateral veins, longer sepals (8 mm long vs. 6–7.5 mm long), longer petals (10 mm long vs. 6–7.5 mm long), and longer stamens (7.5 mm long vs. 5–6 mm long).

*Ouratea apurensis* is known only from the type collection.

***Ouratea paratatei*** Sastre, sp. nov. TYPE: Venezuela. Bolívar: Campamentos "El Paraiso" y "La Yagua" a 48 km NE del caserío Las Rosas, este último a 17 km de Upata (carretera nueva Upata-San Felix), jun. 1966, Blanco 525 (holotype, P; isotypes, NY, VEN). Figure 4.

Ab *Ouratea tatei* Gleason, lamina elliptica viridi, nervo principali prominenti pagina superiore, nervis lateralibus non impressis, differt. Ab *O. pseudotatei* Maguire et Steyermark, lamina nervo principali prominenti pagina superiore, nervis tertiaris paucis visibilibus (non impressis), fructus sepalis persistentibus, differt.

Tree 7 m tall, branches glabrous. Petiole 1 cm long, leaf blade coriaceous, elliptic-ovate, 14–19 × 4.5–7 cm, apex acuminate, base obtuse to round, margin undulate-denticulate, principal vein raised on upper surface, lateral veins subequal, tertiary veins anastomosing, faintly evident. Inflorescence paniculate, terminal, 12 cm long. Flowers not known. Fruits with 5 persistent sepals, these 7 × 2.5 mm, lanceolate, acuminate, the carpels 1–3, obovate, 8–9 × 5.6–6 mm, carpophore conical, 5–6 mm long, peduncle 1 cm long.

*Ouratea tatei* Gleason, *O. pseudotatei* Maguire & Steyermark, and *O. paratatei* are similar, but the fruits of *O. pseudotatei* do not have persistent sepals and so belong to section *Caducuae*; *O. pseudotatei* is endemic to Guyana. *Ouratea tatei* and *O. paratatei* are Venezuelan species, the former occurring in the highlands of Estado Bolívar (Roraima-tepui, Chimantá-tepui), the latter from the

lowlands of Estado Bolívar in the Sierra de Imataca. The differences of the Venezuelan species in section *Ouratea* are outlined in the key below.

KEY TO THE VENEZUELAN SPECIES OF *OURATEA* SECT. *OURATEA*

1. Leaf blades with 2 types of secondary veins: large ascending ones terminating along the blade margin, and between these and the midvein, some smaller, horizontal,  $\pm$  parallel veins . . . . . 2
1. Leaf blades with subequal secondary veins . . . . . 4
- 2(1). Leaves 18–22 cm long, sepals 9–10 mm long . . . . . *O. guianensis* Aublet
2. Leaves 5–9 cm long, sepals 5–8 mm long . . . . . 3
- 3(2). Petiole 2–3 mm long; sepals 8 mm long; petals 10 mm long . . . . . *O. apurensis* Sastre
3. Petiole 5–9 mm long; sepals 6–7.5 mm long; petals 5–6 mm long . . . . . *O. marahuacensis* Maguire & Steyermark
- 4(1). Leaves 12–19 cm long . . . . . 5
4. Leaves 3–12 cm long . . . . . 6
- 5(4). Leaf blades oblong, veins on the lower surface of the blade impressed . . . . . *O. tatei* Gleason
5. Leaf blades elliptic-ovate; veins on the lower surface of the blade not impressed . . . . . *O. paratatei* Sastre
- 6(4). Leaf margin clearly undulate and toothed . . . . . *O. superba* Engler
6. Leaf margin few-toothed . . . . . 7
- 7(6). Leaf blades 3–6  $\times$  1.7–2.7 cm . . . . . *O. longistyla* Maguire & Steyermark
7. Leaf blades 6–12  $\times$  3–5 cm . . . . . *O. spruceana* Engler

*OURATEA* SECT. *OURATELLA*

***Ouratea cidiana*** Sastre, sp. nov. TYPE: Brazil. Pará: Mun. Oriximina, Rio Trombetas a montante do Cachoeira Portura prox. as ilhas Resposta, 00°52'S, 57°03'W, 22 aug. 1986, *Cid Ferreira et al.* 7971 (holotype, P; isotypes, INPA not seen, NY not seen). Figure 5.

Ab *O. soderstromii* Sastre basi foliae obtusa vel rotundata, margine serrata, inflorescentia 2–8 cm longa differt.

Shrub 3 m tall, stems glabrous. Leaves coriaceous, elliptic, 6–9.5  $\times$  1.5–4 cm; base rounded; margin undulate and denticulate; apex acuminate; principal vein slightly prominent above, with 9–11 unpaired, arcuate lateral veins on each side of principal vein, with fine and parallel intersecondaries; petiole 5–6 mm long. Inflorescences axillary, spicate, 2–8 cm long, the peduncle 4 mm long. Sepals 5, obovate, 6  $\times$  3 mm; petals 5, obovate, 7  $\times$  4 mm; stamens 10, anthers sessile, 5 mm long; style 6 mm long. Fruit not seen.

*Distribution.* Known only from the type locality, in Rio Trombetas, Pará, Brazil.

*Ouratea cidiana* differs from *O. soderstromii* by its rounded leaf bases (vs. obtuse); serrate margins (vs. denticulate), and inflorescences 2–8 cm long (vs. 8–10 cm).

*Paratype.* BRAZIL. Pará: Rio Trombetas, near Cachoeira Porteira, 28 May 1974, *Campbell et al.* P.22383 (COL, INPA not seen, NY).

***Ouratea guriensis*** Sastre, sp. nov. TYPE: Venezuela. Bolívar: Represa Guri, islands and W side of river, 1 Apr. 1981, *Liesner & González* 11081 (holotype, VEN; isotypes, MO, NY). Figure 6.

Ab *O. soderstromii* Sastre nervis II et III anastomosantibus, inflorescentiis 2–8 cm longis, carpophoro fructi discoideo 3 mm alto (non conico 10–13 mm alto) differt.

Shrub 1.5 m tall, stems glabrous. Leaves coriaceous, unequal, elliptic, 6–9.5  $\times$  1.5–4 cm; base obtuse or rounded, margin undulate and serrate, apex acuminate; principal vein slightly prominent on lower surface, the secondary veins subequal and anastomosing with the tertiary; petiole 5–7 mm long. Inflorescences axillary, spicate, 2–8 cm long with 1–3 leaves in the basal part, the peduncle 6 mm long. Sepals 5, coriaceous, triangular, 7  $\times$  3 mm; petals 5, obovate, 9–10  $\times$  1.5–2 mm; stamens 10, 6 mm long. Fruits with carpophore discoid, 3  $\times$  8 mm, carpels 7–9  $\times$  4–5 mm.

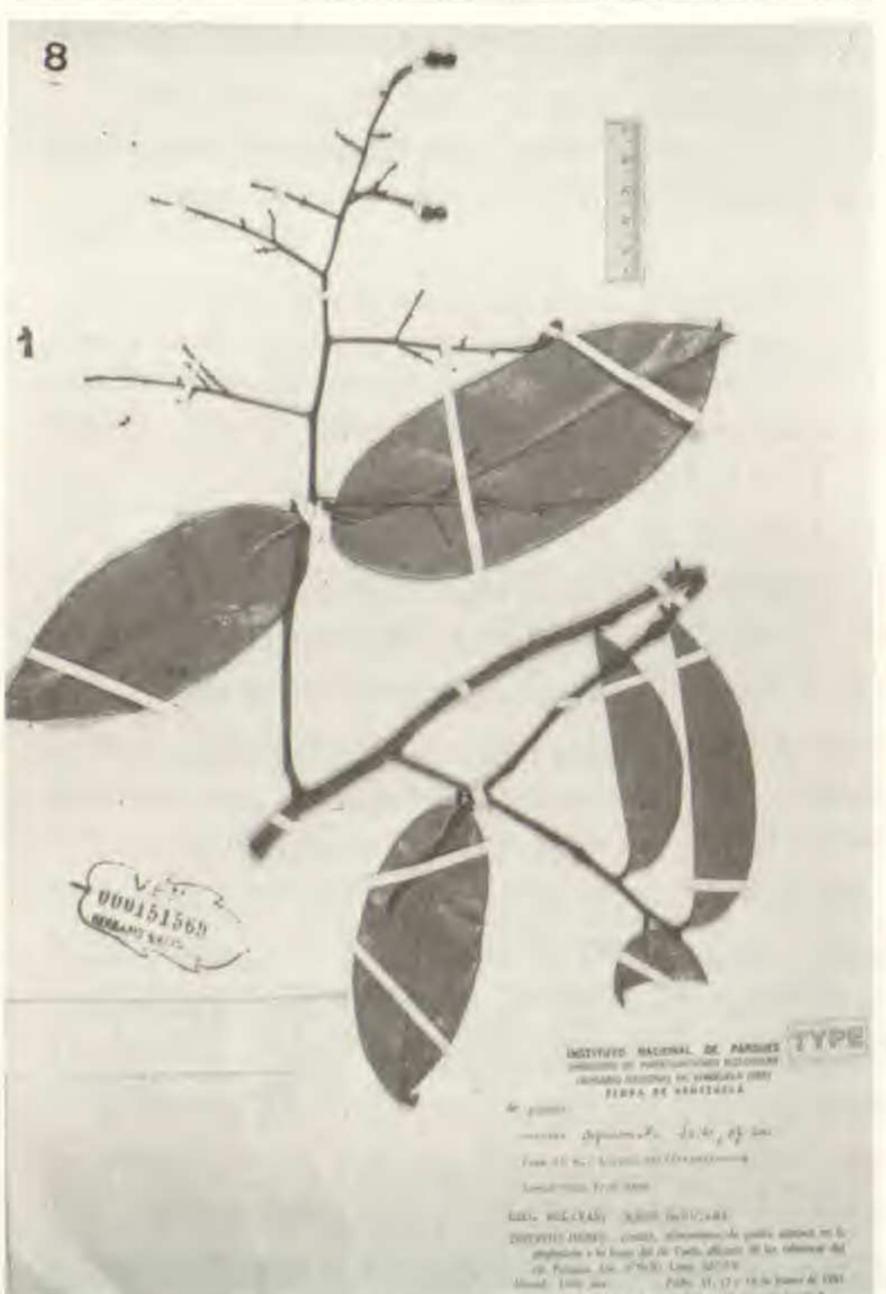
*Distribution.* Known only from the type locality in Estado Bolívar near the Guri Dam.

*Ouratea guriensis* differs from *O. soderstromii* by its anastomosed secondary and tertiary veins, inflorescence 2–8 cm long (vs. 8–10 cm), and carpophore 3 mm long and discoid (vs. 10–13 mm long and conic). It differs from *O. cidiana* by its anastomosed secondary and tertiary veins.

*Paratype.* VENEZUELA. Bolívar: Represa Guri, ca. 0.5 km SSW of dam, on a steep forested slope with open rocks at top, ca. 250–350 m, 7°46'N, 63°00'W, 31 Mar. 1981, *Liesner & González* 11034 (MO, NY, VEN).

***Ouratea pseudoguildingii*** Sastre, sp. nov. TYPE: Venezuela. Bolívar: Río Horeda, 1–4 km above mouth, 90 m, 15 Dec. 1955, *Wurdack & Monachino* 39901 (holotype, P; isotype, NY). Figure 7.

Ab *O. guildingii* (Planchon) van Tieghem, foliis apice obtusa (non acuta), nervis II subparallelis (et non inaequalibus cum 8–12 magnis inter nervis subparallelis tenuis transversales), differt. Ab *O. grosourdyi* Van Tieghem, foliis apice obtusa (non acuta et mucronata), nervis II et III anastomosantibus, inflorescentiis paniculatis (et non spiciformibus), differt.



Figures 5-8. —5. *Ouratea cidiana* Sastre; Cid Ferreira et al. 7971 (holotype, P). —6. *Ouratea guriensis* Sastre; Liesner & González 11081 (holotype, VEN). —7. *Ouratea pseudoguildingii* Sastre; Wurdack & Monachino 39901 (holotype, P). —8. *Ouratea squamata* Sastre; Steyermark et al. 123963 (holotype, VEN).

Tree 3–5 m tall, stems glabrous. Leaves coriaceous, elliptic, 3–5.5 × 1.5–2.5 cm; base rounded; margin denticulate; apex obtuse; principal vein prominent below, the secondary veins subparallel, the secondary and tertiary veins anastomosed; petiole 2 mm long. Inflorescence axillary, paniculate, 5–10 cm long, the peduncle 7–8 mm long. Sepals 5, coriaceous, obovate, 8 × 2 mm; petals 5, spatulate, 9 × 6 mm; stamens 10, a few ornate, anthers sessile, 5 mm long; carpels 5, style 5 mm long. Fruit not seen.

*Ouratea pseudoguildingii* differs from *O. guildingii* by its obtuse leaf apices (vs. acute) and subparallel venation. It differs from *O. grosourdyi* by its obtuse leaf apices (vs. acute and mucronate), secondary and tertiary venation anastomosed (vs. not anastomosed), and paniculate inflorescence (vs. spicate).

*Distribution.* Middle Río Orinoco, Venezuela.

*Paratypes.* VENEZUELA. **Bolívar:** Puerto Ordaz, San Felix, Apr. 1964, *Aristiguieta* 5280 (NY, VEN). **Guárico:** Dto. Infante, Municipio Cabrita, laguna del Caíman, Finca los Becerros, 21 mar. 1990, *S. Tillett et al.* SPB 279 (P, UCU).

***Ouratea squamata*** Sastre, sp. nov. TYPE: Venezuela. Bolívar: Distr. Heres, cerro Marutani, cumbre, afloramiento de piedra arenisca en la altiplanicie a lo largo del Río Carla, afluente de las cabeceras del Río Paragua, 3°50'N, 62°15'W, 1200 m, 11–14 jan. 1981, *Steyermark et al.* 123963 (holotype, VEN; isotype, NY). Figure 8.

Ab *O. poeppigii* van Tieghem foliis inaequalibus, nervis lateralibus pagina superiore impressis, pagina inferiore non visibilibus, nervis II et III anastomosantibus, differt.

Tree, 10 m tall, young stems with scales. Leaves coriaceous, unequal, elliptic, sometimes folded, 10–14 × 4–6 cm; base rounded; margin denticulate; apex acuminate; principal vein prominent below, secondary veins subparallel, impressed above, not apparent below, secondary and tertiary veins anastomosed, petiole 3–4 mm long. Inflorescence axillary, paniculate, 16–26 cm long with 1–3 leaves at the basal part, axes with scales. Flowers not seen. Fruit with conical carpophore, 5–6 × 5 mm, carpels 5–6 × 4 mm.

*Distribution.* Known only from the type locality on Cerro Marutani, Bolívar, Venezuela, near the headwaters of the Río Paragua.

Known only from the type specimen; *Ouratea squamata* differs from *O. poeppigii*, an Amazonian Brazil species, by its unequal leaves, lateral veins

impressed above and not apparent below, and the secondary and tertiary venation anastomosed.

KEY TO THE SPECIES OF *OURATEA* SECT. *OURATELLA* FROM VENEZUELA AND ADJACENT AREAS

1. Inflorescence spicate, not or few-branched . . . . . 2
1. Inflorescence paniculate . . . . . 10
- 2(1). Inflorescence 11–30 cm long . . . . . 3
2. Inflorescence 2–10 cm long . . . . . 4
- 3(2). Leaves 10–15 × 4–6.5 cm . . . . .  
. . . . . *O. croizatii* Steyermark & Maguire
3. Leaves 6–10 × 3–6 cm . . . . .  
. . . . . *O. grosourdyi* (Tieghem) Steyermark
- 4(2). Leaf blade with the margin rolled and few-toothed . . . . . *O. yapacana* Sastre
4. Leaf blade flat with the margin toothed . . . . . 5
- 5(4). Leaves 20–60 cm long . . . . . 6
5. Leaves less than 15 cm long . . . . . 7
- 6(5). Leaf blade oblong, 30–60 cm long . . . . .  
. . . . . *O. ramiflora* Sastre
6. Leaf blade ovate, 20–35 cm long . . . . .  
. . . . . *O. ornata* Maguire & Steyermark
- 7(5). Leaf blade 3–5 × 2–5 cm . . . . .  
. . . . . *O. guaiquinimensis* Sastre
7. Leaf blade 6–15 × 1.5–7 cm . . . . . 8
- 8(7). Leaf blade membranous, inflorescences 8–10 cm long . . . . . *O. soderstromii* Sastre
8. Leaf blade coriaceous, inflorescences 2–8 cm long . . . . . 9
- 9(8). Secondary and tertiary leaf venation reticulate . . . . . *O. guriensis* Sastre
9. Secondary and tertiary leaf venation not reticulate . . . . . *O. cidiana* Sastre
- 10(1). Leaf blades with length/width ratio 1–2.5 . . . . . 11
10. Leaf blades with length/width ratio > 2.5 . . . . . 14
- 11(10). Leaf blades 3–5.5 × 1.5–2.5 cm . . . . .  
. . . . . *O. pseudoguildingii* Sastre
11. Leaf blades 6–15 × 3.5–6 cm . . . . . 12
- 12(11). Leaf blade with 2 types of lateral veins; inflorescence 4–7 cm long . . . . .  
. . . . . *O. caracasana* (Planchon) Engler
12. Leaf blade with lateral veins subequal, inflorescence 7–17 cm long . . . . . 13
- 13(12). Venation of the leaf blade not impressed, inflorescence 7–10 cm long . . . . .  
. . . . . *O. ramossissima* Maguire & Steyermark
13. Venation of the leaf blade impressed, inflorescence 16–17 cm long . . . . .  
. . . . . *O. timehriensis* Sastre
- 14(10). Inflorescences 3–5 cm long . . . . .  
. . . . . *O. guildingii* (Planchon) Urban
14. Inflorescences > 5 cm long . . . . . 15
- 15(14). Leaf blade with lateral veins subequal, secondary and tertiary veins anastomosed . . . . . 16
15. Leaf blade with 2 types of lateral veins, secondary and tertiary veins not anastomosed . . . . . 17
- 16(15). Leaf blades 5.5–8 × 2–3 cm; young stems without scales; inflorescence axis papillate . . . . .  
. . . . . *O. papillata* Maguire & Steyermark
16. Leaf blades 10–14 × 4–6 cm; young stems with scales; inflorescence axis not papillate . . . . .  
. . . . . *O. squamata* Sastre

- 17(15). Leaf blades coriaceous .....  
 ..... *O. duidae* Steyermark  
 17. Leaf blades membranaceous .....  
 ..... *O. poeppigii* Van Tieghem

*Ouratea cidiana*, *O. ramiflora*, and *O. poeppigii* occur in Amazonian Brazil, and *O. timehriensis* occurs in Guyana.

*Acknowledgments.* I thank Bruce K. Holst for assistance with the manuscript.

#### Literature Cited

- Aublet, F. 1775. Histoire des plantes de la Guyane française 1: 1-261. Paris.  
 Engler, A. 1876. Ochnaceae. In: Martius, Flora Brasiliensis 12(2): 301-332, pl. 62-77. Monachii.  
 Kanis, A. 1968. A revision of the Ochnaceae of the Indo-Pacific area. Blumea 16: 1-82.  
 Sastre, C. 1988. Synopsis generis *Ouratea* Aublet (Ochnaceae). Bull. Mus. Natl. Hist. Nat. Paris 4<sup>o</sup>. sér., sect. B Adansonia 1: 47-67.  
 Tieghem, P. van. 1902. Sur les Ochnacées. Ann. Sci. Nat. Bot., sér 8, 16: 161-416.